

REMARKS

The application has been reviewed in light of the final Office Action dated October 23, 2006. Claims 1-3, 8-12, 17-21, 26-30, 35-39, 44-48 and 53-55 are pending. Claims 4-7, 13-16, 22-25, 31-34, 40-43 and 49-52 were previously canceled, without prejudice or disclaimer. By this Amendment, claims 1, 10, 19, 28, 37 and 46 have been amended to clarify the claimed subject matter. Accordingly claims 1-3, 8-12, 17-21, 26-30, 35-39, 44-48 and 53-55 are presented for continued examination, with claims 1, 10, 19, 28, 37 and 46 being in independent form.

Claims 1, 3, 10, 12, 19, 21, 28, 30, 37, 39, 46, 48 and 55 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Wada et al. (JP 10-333852) in view of Hashimoto (US 2002/0060675 A1). Claims 8, 9, 17, 18, 26, 27, 35, 36, 44, 45, 53 and 54 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Wada in view of Hashimoto and further in view of Venable (US 2003/0152272 A1). Claims 2, 11, 20, 29, 38 and 47 were rejected under 35 U.S.C. § 102(a) as purportedly unpatentable over Wada in view of Hashimoto and further in view of McIntosh, “POSTSCRIPT: A Page Description Language”.

Applicant has carefully considered the Examiner’s comments and the cited art, and respectfully submits that independent claims 1, 10, 19, 28, 37 and 46 are patentable over the cited art, for at least the following reasons.

This application relates to an improved technique devised by applicant for performing an image overlay process wherein graphic rendering instructions are sequentially processed such that in some instances, a first image to be rendered based on first rendering data by a first graphic rendering instruction is overlaid by a second image to be rendered based on second rendering

data by a second graphic rendering instruction. In the improved approach devised by Applicant, the image processing apparatus (a) detects image overlay (that is, the first image is overlaid by the second image), and then (b) modifies the first rendering data to omit the portion to be overlaid by the second original image, draws a third output image based on the modified first rendering data in which the specified portion of the first original image is deleted, and stores the modified first rendering data and the second rendering data into the memory. Thus, communication and processing can be accelerated and resources can be conserved (as compared to conventional approaches wherein each of the first and second images is stored in its entirety in memory and processed). Each of independent claims 1, 10, 19, 28, 37 and 46 addresses these features, as well as additional features.

Wada (JP 10-333852), as understood by Applicant, proposes an approach for graphical objects wherein at least some of the objects may overlap. In the system proposed by Wada, image data are organized as data objects which are associated with corresponding priorities, and the stored data are intermediate data which is at a level of abstract higher than the data needed for plotting-output such that the intermediate data must be expanded before being sent to the plotter. In Wada, when overlap between objects are identified, overlapped portions are not sent to expansion, instead the portion constituting overlap is processed according to the respective priorities of the overlapping objects.

However, Wada does not teach or suggest image processing apparatus which detects image overlay, and then modifies first rendering data for rendering a first original image to omit the portion of the first original image to be overlaid by the second original image, draws a third output image based on the modified first rendering data in which the specified portion of the first

original image is deleted, and stores the modified first rendering data and the second rendering data into the memory.

Hashimoto, as understood by Applicant, proposes an apparatus enabling a user to display selected image pages in overlapped fashion to allow the user to visually confirm a processing area or range for a predetermined image processing, and then remove, move or insert an image in the selected area.

However, Hashimoto does not involve image overlay wherein first rendering data for rendering a first original image is modified to omit a specified portion of the first original image to be overlaid by a second original image, a third output image is drawn based on the modified first rendering data in which the specified portion of the first original image is deleted, and the modified first rendering data and the second rendering data are stored into memory.

As pointed out in the Office Action, Hashimoto proposes combining the overlapping portion of the multiple images by a composition operation, such as an OR operation.

Venable, as understood by Applicant, proposes an approach for processing multiple digital images wherein bleeding of edges of the multiple digital images can be reduced by determining the boundaries of the images, determining that an overlap of boundaries exists, calculating the overlap and blending the overlapped images to yield a third image which depicts a combination of the two images without an overlap.

However, Venable is not concerned with image overlay, and, like Wada and Hashimoto, does not teach or suggest an image processing apparatus which detects image overlay (that is, the first image is overlaid by the second image), and then modifies first rendering data for rendering a first original image to omit the portion of the first original image to be overlaid by the second

original image, draws a third output image based on the modified first rendering data in which the specified portion of the first original image is deleted, and stores the modified first rendering data and the second rendering data into the memory.

In the processing of Venable, the two images are blended. The techniques of Venable do not save resources by detecting the overlaid image.

The remaining cited references similarly fails to teach or suggest the subject matter of claim 1 as amended.

Akasawa, as understood by Applicant, proposes an approach for forming a panoramic image by joining plural regular-sized images in a digital still camera. Akasawa teaches that overlap is detected between adjoining images by comparing image data. However, Akasawa does not involve image overlay.

Murakami, as understood by Applicant, proposes an approach for processing large-sized documents. In particular, such a large-sized document is typically divided into plural manageable images having overlapping portions with each other. Murakami teaches that the plural images are recombined by detecting a joining line on overlapping images, and discarding an overlapping portion of each of the overlapping images which adjoins the joining line. Murakami is not directed to detection of image overlay.

McIntosh, as understood by Applicant, is directed to the POSTSCRIPT page description language.

Applicant does not find teaching or suggestion in the cited art, however, of an image processing apparatus which detects image overlay, and then modifies first rendering data for rendering a first original image to omit the portion of the first original image to be overlaid by

the second original image, draws a third output image based on the modified first rendering data in which the specified portion of the first original image is deleted, and stores the modified first rendering data and the second rendering data into the memory, as provided by the subject matter of claim 1 as amended.

Independent claims 10, 19, 28, 37 and 46 are patentably distinct from the cited art for at least similar reasons.

Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1, 10, 19, 28, 37 and 46, and the claims depending therefrom, are patentable over the cited art.

In view of the remarks hereinabove, Applicant submits that the application is now in condition for allowance, and earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that are required, and to credit any overpayment, to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,

  
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Paul Teng, Reg. No. 40,837  
Attorney for Applicant  
Cooper & Dunham LLP  
Tel.: (212) 278-0400